

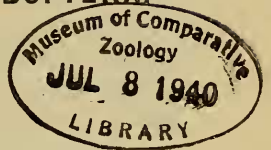
EARLY STAGES OF ORIENTAL PALAEARCTIC LEPIDOPTERA.

IV.*

13,820

By E. P. WILTSHIRE, F.R.E.S.

(Plate IV.)



Including a Contribution by ABDUL MUN'IM S. TALHOUK.

PART I.

When I left the Lebanon in early 1935 I had not definitely solved the identity of the caterpillar-tents to be seen on tall oaks (*Q. lusitanica*) on the road between Beirut and Aley, though it seemed likely that they would prove to be those of *Eriogaster philippsi*, Bartel, which was the only insect on our list to which they were appropriate. Passing through the Lebanon again in early June 1936 I found that I was too late for these larvae, only obtaining many shed skins and, on the oak-stem in the heart of the nest, a cluster of hatched ova. However, the resident and enthusiastic lepidopterist, Mr Talhouk, with whom I began corresponding, subsequently succeeded in breeding these larvae and confirming my previous guess as to their identity. Mr Talhouk, after kindly sending me a larval skin and several imagines bred by him, has now sent me an excellent biological account of this (to us) rare moth; I include it in this article at the end of my own descriptions.

The species described in this article come from a variety of districts, in Syria, Iraq and Iran.

AMATHES PAULI, Stgr.

In the first of the articles detailed in the footnote I described the early stages of *A. kindermanni*, ssp. *pauli*, and my account was summarized in Seitz III Supplement without mention of the subspecific name. Last year M. Charles Boursin informed me (*in lit.*) that an examination of the genitalia of the representatives of the genus *Amathes* showed that *pauli*, Stgr., was a *bona species*, distinct from *kindermanni*, F.R.; the example of *pauli* examined by Boursin was a Lebanese male from my own collection. Readers, therefore, are requested to note that the larval description attributed to me by Draudt-Seitz as *kindermanni* should really be *pauli*, as clearly indicated in my original article.

LACYDES SPECTABILIS, Tausch.

The larva of this mountain-species has apparently already been described, for a summary description is given in Seitz II. Since I find this description unsatisfactory in one or two particulars I describe it again hereunder.

When full-grown, black, dappled sparsely and vertically with lemon-yellow, and densely covered with lemon-yellow hairs proceeding star-wise from brown warts; spiracles, black; below them, a clear yellow sub-lateral line. Dorsal line, broad and black, the hairs thereon being also

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black. Head, glossy-black with a white dot on each side of the mouth. (Figure 6.)

A larva was found on 11.vi.39 at 9000 feet on To-Chal, a mountain in the Elburz Range near Tehran. In captivity it only fed for one day (foodplant: *Salvia*) then fasted for six weeks, finally pupating on 4.viii.39. The larval skin was shed by a dorsal split but was not crumpled or passed backwards to the anal extremity, but remained beside the pupa looking like a dead mature larva. The imago hatched during the daytime on 30.viii.39. From this it would seem that a sort of aestivation takes place before pupation, remarkable in a peak-species.

ORGYIA DUBIA, Tausch.

Previous publications show that this larva varies geographically. The following is the difference between the Lebanon and the Elburz larvae.

Lebanon: Larva, black, with pale hairs low down on the sides, a pale fringe over the head, a pale anal tuft, and four honey-brown, white-tipped pencils on somites 4-7. A subdorsal chain of red warts sends red bars almost across the back of the other somites. Below them, a line of paler ochreous warts. Head, reddish, black at mouth.

Foodplant: *Astragalus cedreti*, on which it feeds with larvae of *Libanopacha schwingenschussi* at 5-9000 feet in mid-summer.

Elburz: Larva, black, with yellow mottling and orange-brown warts from which issue black hairs star-wise; a yellow transverse bar on each somite posteriorly except the thoracic somites, and two yellow subdorsal blobs on the fore part of each abdominal somite. The thoracic somites bear several finer yellow transverse lines. Four black tufts with white centres on somites 4-7. Anal pencil, white. Spiracles, indistinguishable. Feet, black and brown, orange centrally. Head brown, inclining to yellowish at the fork between the lobes, and black on the face. Ventral area, greenish. There are two orange circular dorsal buttons between the larger subdorsal warts. (Figure 4.)

Foodplants: *Astragalus*, *Rumex scutatus*, *Silene*. Observed at 8000 feet.

In both districts it is a day-feeder. Larvae usually produce a majority of females. The female remains in its cocoon and never becomes free of its thin pupal exuvium.

Elburz larvae were full-grown in vii.39, and the first male appeared from the cocoons on 25.vii.39.

ERIOGASTER PHILIPPSI, Bartel.

The following description of a mature larva was made by me from a skin sent me by Mr Talhouk:—

White, freckled with black; dorsal chain, velvety-black and interrupted, each link containing two tufts of gold-brown hair. Similar yellow-brown tufts on the sides of each somite. On somites 2 and 3 the dorsal patches are broader and contain redder-brown hairs; on somite 1, a black collar split by a fine white dorsal line. Head, glossy black with a few pale ochreous markings. Feet, pale yellow brown. Spiracles, yellow-brown, black-rimmed.

Further details, from Mr Talhouk's own pen, are given at the end of this paper. The only comment I have to offer on them is on the

opening sentence, which indicates that Mr Talhouk has found this moth much commoner than did Mr Ellison or I. There are two possible explanations of this: either the species has increased greatly in numbers since we left (cf., the irregular profusion of its relative *Eriogaster lanestris* in England) or Mr Talhouk's remarks apply especially to the Aley region, where he lives, whereas I and Mr Ellison paid more special attention to the Brummana-Shweir Middle Heights, further north. Around Aley oak-trees are scarcer than further north, and infestation of trees there might therefore be proportionately intenser. Probably both these explanations operate together in this case.

Quite likely Mr Talhouk may find the caterpillars much scarcer again in a year or two.

CHILENA PROXIMA, Stgr.

Egg: Oblong-oval, slightly flattened above and below, but not always laid flat; laid in irregular strings or small batches; putty-white, with a slight glaze, and a depression on the top side.

Larva: I give below a tabular comparison between the larvae of *proxima* and *sordida*, Ersch, made from larval skins of the former from Iraq in my own collection and skins of the latter in the British Museum labelled "Christoph. coll. 1902-195. *obliquata*, Klug. = *sordida*, Ersch. Turkestan."

SORDIDA.

PROXIMA.

TUFTS ON SOMITES 2 AND 3.

Black and yellow.

Black and orange.

DORSAL LINE.

Cream-coloured, black-edged.

Orange; indefinite.

DORSAL AREA, BETWEEN DORSAL AND SUBDORSAL LINES.

Blue, interrupted transversely with brick-red and lightly mottled with black and yellow near the dorsal line.

Blue, interrupted transversely with brick-red and heavy transverse black dashes.

SUBDORSAL LINES.

Brick-red, with a whitish infusion in the centre of each somite, and black freckling below.

Brick-red, defined above and below with black.

LATERAL AREA, BETWEEN SUBDORSAL AND LATERAL LINES.

Heavily freckled with black.

Lightly freckled with blue, yellow and black.

LATERAL LINES.

Creamy, with freckled black edging above.

Yellow and orange, ill-defined, flecked with black, and having a heavy black interrupted edging below.

SUBLATERAL AREA, BETWEEN LATERAL LINE AND SPIRACLES.

Pale creamy, thickly mottled with slatey-lilac.

Ochreous, dappled with black, blue and orange, with an interrupted thick black line above the spiracles.

SPIRACLES.

Ochreous, black-rimmed; behind each is a conspicuous orange seta.

Ochreous, black-rimmed.

The larva of *proxima* (Figure 1) has a blue-grey head, orange thoracic feet, and soft whitish hairs especially low down on the sides. The underside is banded and dappled with blue, cream, black, and orange. Claspers, orange, black-marked. On somites 2 and 3, a black dot fairly high up on each side. Somite 1 is bluish-grey dorsally.

It feeds in broad sunlight on bushes of *Prosopis stephaniana*, often accompanied by larvae of *Taragama siva* (which, however, feeds also on *Populus euphratica*, pomegranate, and tamarisk). It moves briskly, and grows rapidly, producing a succession of broods during the long Mesopotamian summer.

The cocoon (Figure 2), which is usually spun high up in the food-plant, is rather like a monkey-nut, but slightly woolly; it is firmer and smaller than that of *O. potatoaria*, and becomes bleached with exposure. Pupal period, in summer, 9 days. I believe the winter is passed in the egg stage, but have not established this.

Imago: To light, Hassette (Syria) and Mosul Desert, 1935; Table Mt. and Bagdad (Iraq), 1936, '37; Ahwaz (Khuzistan, Iran), 1938. A characteristic insect of the Mesopotamian desert.

AGROTIS (CLADOCEROTIS) BENIGNA, Corti.

Ova: Bun-shaped, ivory-white at first, duller later, with brown apical dot and ring; laid in patches in honeycomb formation, or singly. Period, 13 days.

Larva: When freshly hatched, slug-grey, with a black head, thoracic plate, spiracles and thoracic feet.

The instars are similar except the first, which is distinguished by the black colouring of the head, etc.

The mature larva is putty-coloured, slightly brown-tinged, with scanty darker grey mottlings, and a green internal colouring showing at the joints and underneath. The skin is very thin; the habits are still rather sluggish; the general appearance undistinguished. All the lines are interrupted in the centre of each somite, and the dorsal line is only visible on the fore-part of each somite. The dorsal line has a pale centre and a darker grey edging; the subdorsal and sublateral lines are formed of grey mottling, the former being the most defined of all, and the latter being of varying intensity. Spiracles, black, conspicuous. Tubercles, grey, or, on hindmost somites, fine and black. Head and thoracic plate, light brown, speckled and dotted finely with black. Thoracic feet, light brown. (Figure 5.)

Foodplants: Many kinds of low plants. It feeds above the surface by night, concealing itself by day in crevices.

Imago: To light, Kermanshah, Iran (4800 feet), x.39.

The larva hibernates, but can be forced to attain full growth by December or January, if kept warm indoors.

DISCESTRA ARENARIA, Hamps.

I am not entirely satisfied that this name is the earliest for the present species. A thorough revision of the genera *Discestra* and *Cardepi* is needed, and synonymies between species now attributed to different genera are likely to be established. For instance, an examination of the type of Rothschild's *Cardepi* *taylori* has left me without any doubt that this is a synonym of *Scotogramma trifolii*, Rott.

The present species, studied in Khuzistan, extends to the Sind desert, and probably westward also.

The ovum is ivory white, later grey; bun-shaped; its sculpture is clearly visible under a lens. Laid singly.

The larva when freshly hatched is grey-green with pale setae and an ochreous grey head. The markings develop progressively in the successive instars; in the first two, the head seems to have black dots, but becomes glossy green in later instars; in the last, under a lens, it is seen to be lightly mottled with brown and to have blackish antennae, but when blown turns yellow. In instar 3 the larva is more noticeably swollen and rounded on somites 1-3 and 10-13 than when mature. The bands of dappling, described below, first appear in instar 3.

When mature, it is smooth, green, and of a lighter hue below the spiracular line. The centre of each somite is dappled with a band of blackish dappling, which is obsolescent in the light forms, and which, in the darkest forms, is also found ventrally on the thoracic somites, but is normally confined to the dorsal parts; where the dorsal and subdorsal lines pass through this band, they are black edged. The black dappling is sometimes intensified on somites 1 and 11, forming a blackish thoracic plate on the former. Dorsal and subdorsal lines, white, interrupted at the somital joints; the former has an interrupted black edging on either side, the latter a similar upper edging. The anterior half of the black dappled band is, when distinct, much more so than the posterior, but the dorsal line's black edging consists of two equally clear black lines, one in the anterior part and one in the posterior part of the band; thus, the black edging is interrupted, not only at the somital joints but also in the middle of each somite. The posterior section of black edging is the shorter and is obsolescent in the lighter forms. Spiracles, yellow-white, black-rimmed, set (as in *S. trifolii*) in a black shade just above the sublateral stripe; their rim is less intensely black and they are less conspicuous than the spiracles of *trifolii*. Sublateral line, broad, whitish-yellow, with a yellow-brown clouding in its centre on each somite; this line is conspicuous, but less vividly defined than in *trifolii*. (*Arenaria*: Figure 3.)

The following are the chief characteristics by which *arenaria* can be distinguished from *trifolii* larvae; the former's ground-colour is invariably green; the dorsal line, though interrupted, is white and clear, not obsolescent as in *trifolii*; the dorsal line is black-edged; the black edging to the subdorsal lines is clearly interrupted in the middle of each somite. *Trifolii* is more finely mottled, but the mottling is not black, nor concentrated into bands. The two species occur together.

Rate of growth: Irregular; the fastest larvae pupated 17 days after hatching from ova, but many of their brothers and sisters were then hardly half-grown. Ova laid on 24.iv.38 hatched on 28.iv, and the first pupa from these larvae was formed on 14.v.38. The first imago to hatch, from a pupa formed on 16.v, hatched on 23.v.38; while the first pupa did not develop till the autumn. The second summer brood was not observed in a state of nature, and is evidently only partial. The two regular broods are in late iv and late x. The imago comes to light.

Foodplant: *Atriplex*, and probably other plants to be found on salty desert soil.

Pupa, glossy, red-brown, similar in structure to that of *trifolii* but with a much thinner chitinous case, and hence lighter in colour. Rather smaller than *trifolii*.

The larva shrinks remarkably in pupating; an inflated mature skin is 3.5 cm. long, and a living larva which before burying was 2.5 cm. long produced a pupa only half that length.

EXPLANATION OF PLATE IV.

(Enlarged.)

- Fig. 1. *Chilena proxima*, Stgr., mature larva on food plant (Iraq)
 Fig. 2. *Chilena proxima*, Stgr., two cocoons.
 Fig. 3. *Discestra arenaria*, Hamps., larva (Ahwaz).
 Fig. 4. *Orgyia dubia*, Tausch, larva (Elburz).
 Fig. 5. *Agrotis benigna*, Cti., larva (Iran).
 Fig. 6. *Lacydes spectabilis*, Tausch, larva (Elburz)
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COLLECTING NOTES. II. JUNE-SEPTEMBER 1939.

By A. J. L. BOWES.

A spell of warm weather at the beginning of June awoke pupae with a rush, among them a fine lot of *Synanthedon vespiformis*, which was also emerging in the wild at the same time; at Netley Heath old oak and birch stumps were full of empty pupa cases of *S. vespiformis* and *S. culiciformis*. The first of my larvae of *Parascotia fuliginaria* spun up on 5th June; when they reached their last stage they were put into a 7 lb. biscuit tin with plenty of fungus laid on the bottom and strips of old bark propped against the sides. This made a good dark retreat for them, and all pupated successfully in spite of repeated attempts at sabotage by late arrivals, which insisted on letting down guy-ropes already in position, and even on utilising them themselves.

A flying visit to Wye Downs and the Ashford Woods on the evening of the 10th was most enjoyable, but made unprofitable by a cool wind. At dusk, *Scoria lineata* was very common, flapping lazily over the long grass, an easy prey for hawking swallows. *Eupithecia scabiosata*, too, was common, flying around a spindle bush, where it can be found year after year even if none are seen on the surrounding hillside. *Pachetra leucophaea* came to sugar and light thinly up to 1 a.m. During an hour which I spent in the woods south of Ashford, barely half-a-dozen species were seen, a figure which compares oddly with a bag of over a hundred species on a similar date in 1934: even *Stauropus fagi* and *Drymonia trimacula*, usually to be reckoned as regulars in these woods, made no sort of a show.

Night work in Surrey was better sport. On the 17th, a night which made no pretensions to warmth, at Byfleet, sugar was visited by *Acronicta leporina*, *Aplecta tinctoria*, *A. nebulosa*, *Noctua festiva*, *Dipterygia scabriuscula*, and smaller fry, and after dark there was a fine emergence of *Perconia strigillaria*.

At the end of the month I paid several daytime visits to the downs near Newlands Corner, where on posts which ran up over the hillside sat a large number of assorted Noctuids. *Hecatera serena* and *Cucullia umbratica* were common, with a good many *Dianthoecia conspersa* and